



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/591,607

07/17/2007

Sergej Lopatin

LOPA3010 /FJD

3404

23364 7590 01/28/2010

BACON & THOMAS, PLLC

625 SLATERS LANE

FOURTH FLOOR

ALEXANDRIA, VA 22314-1176

EXAMINER

GORDON, BRYAN P

ART UNIT

PAPER NUMBER

2837

MAIL DATE

DELIVERY MODE

01/28/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,607	Applicant(s) LOPATIN, SERGEJ	
	Examiner BRYAN P. GORDON	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8 and 10-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8 and 10-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 8, 10-11 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brutschin (PG Pub 20030159506) and in view of Lopatin (PG Pub 20050034521).

5. Considering claim 8, Brutschin teaches an apparatus for determining and/or monitoring a process variable of a medium, comprising: a membrane (5); an oscillatable (2) unit secured to said membrane; a sending/receiving unit (6), which excites said oscillatable unit to oscillate and which receives oscillations of said oscillatable unit; a control/evaluation unit (10), which, on the basis of the oscillations of said oscillatable

Art Unit: 2837

unit, monitors and/or determines the process variable, wherein; said sending/receiving unit comprises a disk-shaped, piezoelectric element (15).

However, Brutschin does not teach said disk-shaped, piezoelectric element has two segments, which are essentially polarized oppositely to one another; said two segments of said disk-shaped, piezoelectric element are connected in series; exactly two electrodes of opposite polarity are applied to the side of said disk-shaped, piezoelectric element facing away from said membrane and said exactly two electrodes of opposite polarity are applied to said disk shaped, piezoelectric element facing away from said membrane.

In the same field of endeavor, Lopatin teaches said disk-shaped, piezoelectric element has two segments, which are essentially polarized oppositely to one another (paragraph 0015 lines 14-16); said two segments of said disk-shaped, piezoelectric element (See Figure below in arguments) are connected in series (just referring to one piezo-drive (i.e. segment) and not the stack piezoelectric elements which are connected in parallel); exactly two electrodes of opposite polarity are applied to the side of said disk-shaped (paragraph 0015 lines 11-13), piezoelectric element facing away from said membrane and said exactly two electrodes of opposite polarity are applied to said disk shaped, piezoelectric element facing away from said membrane (paragraph 0015 lines 11-13).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Brutschin's device with Lopatin's for detecting oscillation and producing a wagging motion which makes the oscillatable unit fabrication

Art Unit: 2837

cost decrease since it can have almost any shape and that the drive can be space-efficient and easily mounted.

6. Considering claim 10, Brutschin (5a) teaches wherein the electrodes (18-21) have essentially the same shape.

7. Considering claim 11, Brutschin (5a) teaches wherein the electrodes (18 and 21 make up one semicircle and 19 and 20 make up the other) have the shape of semicircular segments.

8. Considering claim 13, Brutschin teaches said piezoelectric element is provided on the said facing said membrane at least partially with a conductive coating (paragraph 0018).

9. Considering claim 14, Brutschin teaches wherein the said membrane is connected electrically conductively with ground (paragraph 0006).

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brutschin (PG Pub 20030159506), in view of Lopatin (PG Pub 20050034521) and in view of Lewiner (US PN 4,553,089).

11. Considering claim 12, Brutschin in view of Lopatin does not teach said electrodes are so structured and arranged that they annularly surround themselves.

Lewiner teaches said electrodes are so structured and arranged that they annularly surround themselves (col. 2 lines 64-68).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to include the electrodes annularly surrounding themselves taught by Lewiner with the combination above since a simple substitution of electrodes

Art Unit: 2837

surrounding themselves would produce predictable results (i.e. oscillation/vibration) of the device.

Response to Arguments

12. Applicant's arguments filed 13 October 2009 have been fully considered but they are not persuasive. Regarding the argument that Loptain does not teach two segments of piezoelectric element are connected in series the examiner refers to the Figures to explain his interpretation.

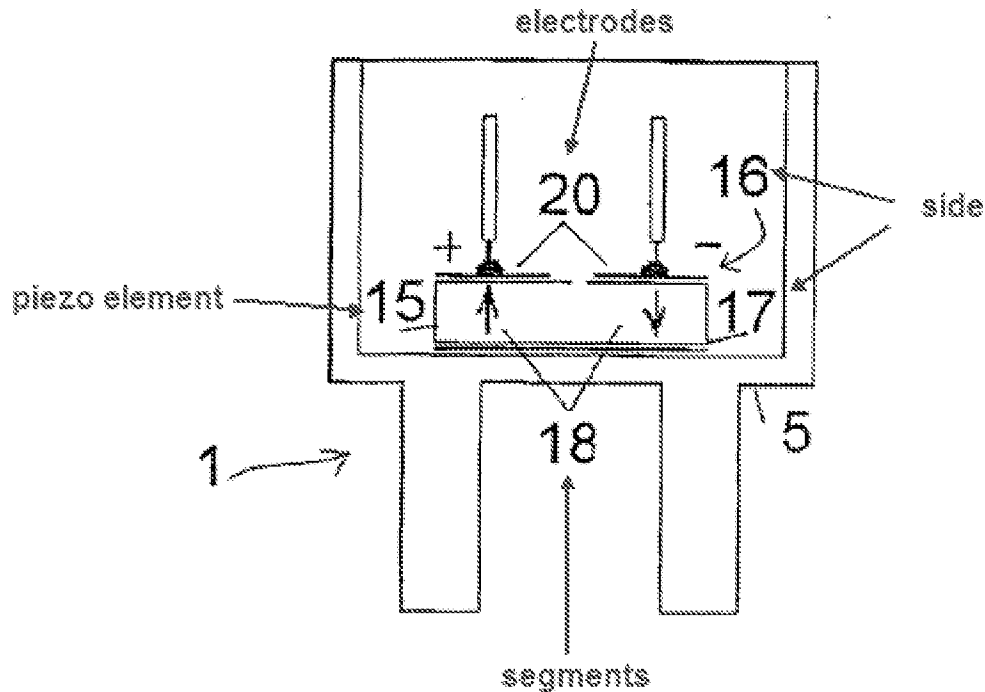


Figure A

13. This is the applicant's apparatus for determining and/or monitoring a process variable of a medium. The device contains a piezo element which contains two segments. The applicant claims the two segments of the piezo element are connected

Art Unit: 2837

in series. Each segment is polarized in an opposite direction as indicated by the arrows.

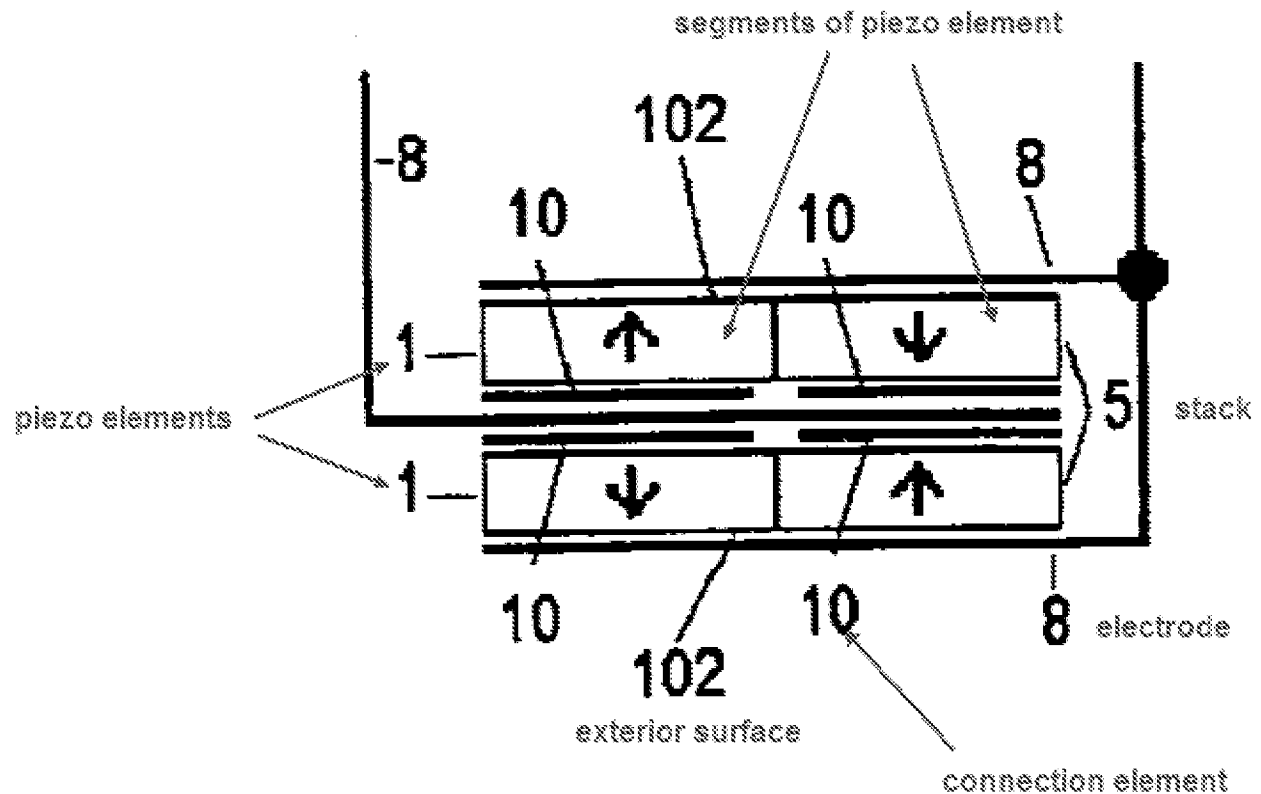


Figure B

14. Figure B shows Lopatin's device in which two piezoelectric elements are stacked. Looking at the top piezoelectric element Lopatin's device has the same structure as the applicant's claim. One of ordinary skill in the art can conclude that the segments of Lopatin's would be connected in series since segments are not stacked on top of each other but rather adjacent to each other just like the applicant's device. Therefore, Lopatin does meet the applicant's limitation. Furthermore, It has been held that where

Art Unit: 2837

the structure recited in a reference is the same as the claimed structure, claimed properties and functions are presumed to be inherent (*In re Best*, 195 USPQ 430, 433).

15. In response to Applicant's argument that there is no suggestion to combine the references, the examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art rather than by their specific disclosures. *In re Bozek*, 163 USPQ 545 (CCPA 1969). In this case, since Loptain and Brutschin both deal with a device used for monitoring at least one physical parameter of a medium having at least one mechanically oscillatable unit and at least one drive/receive unit one of ordinary skill would be motivated to combine the two references since they are both in the same field of endeavor.

16. Regarding the argument that Lewiner appears to be in a totally different scope and field of endeavor the examiner argues that Lewiner is only used to teach the electrodes arranged that they annularly surround themselves. It is just brought in to teach to one ordinary skill in the art that one could easily substitute in the electrode arrangement of Lewiner into the combination above since doing so would produce predictable results (i.e. oscillation/vibration) of the device. Furthermore, the

combination of Brutschin and Loptain teaches the electrodes are oppositely charged (see claim 1 above). Therefore, the applicant's arguments are moot.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

18. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN P. GORDON whose telephone number is (571)272-5394. The examiner can normally be reached on Monday-Thursday 8:00-5:30, Friday 7:30-4:00.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Benson can be reached on 571-272-2227. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2837

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Walter Benson/
Supervisory Patent Examiner, Art Unit 2837

/Bryan P Gordon/
Examiner, Art Unit 2834